



CHARITY HOSPITAL

MEDICINE IN THE CONFEDERACY*

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IN THESE DAYS OF SHORTAGES AND PRIORITIES, of rationing and substitutes, of conservation of our natural resources and more complete use of indigenous products, of organization for military service and the adaptation of each citizen to the work for which he is most suited, of consequent economic and domestic readjustments, it has seemed to me that it might be interesting to learn whether this state of affairs, so vital to us, is paralleled to some degree in other times and another war. The people of the South in the days of the Confederacy faced many problems similar to our own. Without regard to the justice of their cause, no one can doubt the whole-hearted conviction, the strength of purpose, the heroism and the sincerity of the men and women of the South. It is undoubtedly true that in time of disaster, when confronted by overwhelming necessity, invention is stimulated and intelligence is aroused. Their resourcefulness and courage under conditions of enormous difficulty, may serve today for us as an inspiration in the turmoil which engulfs the world.

The South, even today, is an agricultural country. Its economic welfare depends on its natural resources, the products of its soil, and their marketing. This was true even more in the days preceding the war between the States. The opening of hostilities found the South completely unprepared, both economically and for military service. Almost immediately a blockade was established which quite effectively prevented importation of munitions and manufactured products from abroad. Since shipping was controlled to a great extent by northern firms, there were few ships or shipyards available to build a fleet for blockade-running. The Navy of the Confederacy was never large.

From a medical point of view, also, complete organization was urgent. On January 1, 1861, the Medical Corps of the U. S. Army consisted of 30 Surgeons and 83 Assistant Surgeons. Of these 3 Surgeons and 21 Assistant Surgeons resigned to join the Confederate forces. The *Medical Corps of the Confederate States Army* was authorized by Act of the Confederate Congress in Montgomery, February 26, 1861, and its organization was planned on that of the U. S. Army. Dr. D. C. DoLeon, of Mobile, Surgeon-resigned of the U. S. Army was made first Surgeon-General. Soon afterwards, however, when the Capitol was moved to

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Richmond, Dr. DoLeon was succeeded by Dr. Samuel Preston Moore, who served in this capacity until the end of the war.

Surgeon-General Moore was born and educated in Charleston. He had served in the Medical Corps of the U. S. Army from 1835, as Assistant Surgeon, then as Surgeon, resigning in February 1861. He took charge of the Medical Department of the Confederacy in June, 1861. The problem which confronted him was enormous. The physicians of the South were almost entirely from rural communities and were completely untrained in military practice, as well as being unskilled in surgery and in the administration of hospitals. Many of the younger physicians, in the flush of patriotism, had enlisted in the ranks. No adequate supplies, raw or manufactured, were available. By early proclamation, medical and surgical instruments, medicines, medical books and appliances had been declared contraband of war. It is a matter of record, that when Senator Gardner of New York on the floor of the American Medical Association in 1863 endeavored to enlist aid in having repealed the inclusion of medical supplies on lists of contraband materials, he was hissed from the hall. The medical department was compelled to improvise and provide for the manufacture of such surgical instruments and armamentaria as could not be secured by blockade runners or by capture. Substitutes for necessary medicines must be sought among the indigenous products of the country, laboratories must be established to prepare and distribute medicines so prepared and the physicians must be instructed in their use. Appropriate sites for hospitals must be selected and the buildings must be constructed. Last and most important, medical personnel to care for sick and wounded must be chosen, and organization of the entire medical department effected.

Chisolm describes the organization thus: "In the Confederate service, but two grades in the medical staff are recognized, Surgeons and Assistant Surgeons with the respective assimilative rank of Major and Captain. The head of the medical department is presided over by a Surgeon-General, with the rank of Lieutenant Colonel of Cavalry, which is the highest grade in the service, and which position is held by seniority of commission. There are other meritorious positions, viz.: of Medical Directors and Inspectors for field and hospitals, and Medical Purveyors of the Army which are appointments by the Surgeon-General, and are considered offices of responsibility and trust, although without increased rank."

"In the Confederate service each regiment, nominally of 1000 men, has one Surgeon and one Assistant Surgeon. Where several regiments are united into brigades, the oldest commissioned surgeon in the brigade assumes the position of Brigade Surgeon, who, however, is not relieved from regimental duty. When brigades are thrown together into divisions, the surgeon upon the staff of the Major-General assumes the

position and duties of Division Surgeon. The union of several divisions, comprising a corps d'armée under the command of a Lieutenant General, has a chief medical officer, with the title of Corps Surgeon, or Medical Director of the corps; and when two or more corps d'armée form an army, the medical affairs of such a body of men are supervised by a Medical Director recommended by the Surgeon-General, and appointed by the Secretary of War, at the solicitation of the general in command."

"In times of peace, two medical regimental officers are found scarcely sufficient to attend to the sick; while in times of epidemics or war, they are incompetent to offer that assistance which the sick and wounded require. Many a life has been sacrificed to procrastination. Upon the first and immediate attention to the wounded on the battle-field depends, in a great measure, the success of treatment; and in any encounter which deserves the name of a battle, the wounded must necessarily be neglected by this deficient medical staff."

In 1863 he wrote, "Our large experience has proved the inefficiency of our regimental medical staff. . . . In active service, every full regiment should have at least one Surgeon and two Assistant Surgeons, these differing only in rank, their duties being similar. Besides the regular regimental Surgeons, there is in the Confederate service, a medical corps to take charge of military hospitals, while regimental officers accompany their commands."

North Carolina seems to have been the only state which appointed a Surgeon-General of her own, whose particular duty it was to provide special care for her sick and wounded soldiers. A report from this office for the year 1864 gives notation of moneys collected and expended for this purpose, in the scattered hospitals of the Confederate States.

The Louisiana Hospital, in the vicinity of Richmond was administered by Dr. Felix Formento, Jr., of New Orleans. Nursing was here under the direction of the Sisters of Charity. After the battles around Richmond, this was one of the hospitals cited publicly as having a low rate of mortality. Tents of the type used as regimental hospitals were here employed in the care of contagious diseases and severe infection. Chloroform, here as in other hospitals, was the anesthetic employed and particular mention is made of the fact that no ill effects were noted in its use. While no evidence for the belief has been located, it is surmised that Louisiana troops serving in Virginia were assigned to this hospital.

In the organization for hospital service, the Quartermaster's department furnished tents, clothing, straw for bedding, fuel, etc. for the sick and wounded. The Commissary Department furnished food. The ration of the soldier was valued by law and at the end of the month the hospital was debited with subsistence drawn from the commissary stores. Any credit was payable in cash by the commissary to the Surgeon in charge,

who expended this fund by voucher, reported to the Surgeon-General. Funds thus accumulated went for the purchase of medicines, surgical instruments and any extra delicacies which might be available for the use of the sick.

Early in the War, *Medical Examining Boards* were established by the Surgeon-General. All physicians in service were required to appear before these Boards and those who refused were dismissed from the staff. Those who failed in this test were used as hospital stewards, attendants and nurses until through study and instruction they passed a subsequent examination.

Since the Official Records of the Surgeon-General's Office of the Confederacy were completely destroyed by fire on the night of the evacuation of Richmond, April 2, 1865, the exact numeration of the Medical Staff can only be estimated. Dr. Joseph Jones believes the total number of Surgeons and Assistant Surgeons, of the Army and Navy to have been somewhat under 3,000. From the records of scattered hospitals it is judged that more than 3,000,000 cases of wounds and diseases were cared for by this personnel, in addition to the care of some 270,000 prisoners.

Prior to May, 1862 medical officers were held as prisoners, just as were other officers, but were often permitted to treat their fellow prisoners. When General Jackson entered Winchester, Virginia, on May 25, 1862 he found in the Union Hotel, seven Federal surgeons caring for about 300 sick and wounded. The General directed that they be allowed to continue in charge undisturbed and that other sick and wounded from among the Union forces be sent there. They were given Federal prisoners to serve as nurses and were furnished by the Commissary with provisions. On May 31, when General Jackson retired, the Provost-Marshal paroled all the physicians in the hospital. They signed a document that they would report to the Secretary of War in Washington, and endeavor to have released a like number of Confederate surgeons. From this incident grew the practice on both sides of returning to their regiments all captured medical officers. This exchange of surgeons preceded the similar ruling of the Red Cross by about two years.

The Confederate conscript law enrolled and actually put into the field every able-bodied man between 18 and 45. In addition each state enlisted for local defense, all who could bear arms between the ages of 16 and 18 and from 45 to 60. The problems confronting the limited personnel of the Medical Department in caring for the army were enormous. Most of the recruits came from rural communities and had never been exposed to the contagious diseases of childhood. Epidemics were the rule. It was estimated that it required twelve months for a new recruit to exhaust the list of initiatory diseases and to inure himself

to the privations, exposures and labors of army service. The medical staff endeavored to enforce rules of hygiene, but sanitary conditions were deplorable and the incidence of disease far exceeded that of wounds. It is said that in Chimborazo Hospital in Richmond in a two-year period only 1 admission in 7, and 1 death in 8 resulted from wounds.

One of the earliest and most urgent of the problems confronting Surgeon-General Moore was the construction of hospital buildings and the organization of *hospital service*. The area surrounding Richmond developed rapidly as the greatest hospital center in the Confederacy. Large tobacco warehouses were used as temporary structures; the boilers became soup kettles. All available lumber was commandeered for the fashioning of beds and other necessary furniture. Dr. James B. McCaw was chosen to head the first large hospital unit, planned by the Surgeon-General, and named Chimborazo Hospital. Dr. McCaw was a native of Richmond, educated in New York. His work in this position is one of the noteworthy achievements of the War.

Following the Battle of Manasses, the wounded poured into the city, before accommodations could be provided for them. The warehouses were filled. In one week it was necessary to care for 2,000 patients; in two weeks for 4,000. Noting the spread of contagious diseases in large buildings inadequately supplied with hygienic facilities, Surgeon-General Moore devised the plan of unit hospital buildings, 100 feet by 30 feet, each one story high. These units were constructed as rapidly as possible, eventually totalling 150 in this one hospital. Five divisions were organized, with 30 wards to each division, the capacity of each ward being from 40 to 60 patients. One Surgeon was in charge of a division, aided by Assistant Surgeons and Acting Assistant Surgeons, all subject to Surgeon McCaw as executive head. The hospital occupied a good location on a plateau outside of the city. It had its own water supply, five large ice-houses, Russian bath houses and sanitary provision. In addition to the wooden buildings 100 Sibley tents housed 800 to 1000 convalescents. A neighboring plantation was loaned to care for 100 to 200 milk cows and 300 to 400 goats which were used for meat. A bakery supplied 7,000 to 10,000 loaves of bread each day, one to a man. The grease from the soup-houses was employed in the making of soap, the lye being smuggled through the blockade. The hospital was supported entirely by ration assignment, with no direct appropriation from the Confederate government. At the close of the War its records showed care of some 76,000 patients treated in Chimborazo Hospital, approximately 17,000 from wounds. Mortality was a fraction over 9 per cent. This is believed to be the largest military hospital to this date. Col. Hume compares it with the Justice Hospital Center at Toul, France in World War No. 1, where 67,866 patients were treated to the end of March 1919.

Over 60 general hospitals are noted in the various publications of the period, about ten others in the vicinity of Richmond. Winder Hospital, located here, covered 125 acres of land and consisted of six divisions. Sixteen acres of hospital garden were worked by convalescents. It is interesting to note that staff meetings were instituted at Winder Hospital to consult on cases and exchange medical experiences.

Hospitals in more distant centers operated under greater difficulties. Personal experiences in the Tennessee area have been detailed by Surgeon S. H. Stout. On transfer to the Hospital Service in 1861, Dr. Stout found the unit housed in a warehouse in Nashville, in which front windows and doors and one sky-light were the only means of ventilation. There were no accounts, no register, no histories and no diet records; 650 patients were lying on the floor or in bunks, many of them seriously ill. The hospital had previously been in the charge of the ladies of the Nashville Hospital Association, and patients were treated by civilian physicians whom they called. Hygienic conditions were deplorable. Only with difficulty was Dr. Stout here enabled to effect the military organization finally achieved, in which the ladies rendered valuable aid in preparing special diets for designated cases. Small wonder that the soldiers looked upon consignment to such military hospitals with universal dread.

Regimental *field hospitals* are described by Chisolm. Each regiment had two units, each 14 x 15 feet and 11 feet high with a 4½ foot surrounding wall and a *fly* which permitted two or more to be thrown together; eight or ten patients were cared for in each unit. Tents were scarce from the beginning of the war owing to lack of manufacture and the maintenance of strict blockade. As hostilities continued many were destroyed in quick moves to prevent their falling into the hands of the enemy. These regimental hospitals were used for transient cases only, all others being transferred to the general hospital. Oil cloth or painted canvas covered the floor. Bed sacks filled with straw were recommended as being better than heaped straw. Dr. Chisolm advises that the straw should be changed twice a week, but since straw was scarce in the Confederacy, notes that the sick often were compelled to lie on the ground, and the tent should therefore be moved once a week. The staff included one steward, one nurse and one cook, drawn from enlisted personnel of the regiment.

H. I. Bowditch in a contemporary publication described a visit to a field hospital:

"On the following morning after dressing many wounds, I accompanied Dr. H. to the rebel hospital, about four miles farther on the Warrenton Road, for the purpose of removing Capt. Kelton of the 21st Regiment, whose thigh had been amputated by Dr. Miller, the rebel surgeon. We found four of our soldiers there and about 75

wounded rebels lying on the hay in a very comfortable stone barn. I observed that the medicines and surgical appliances used there had Philadelphia labels. Had they been captured, stolen or smuggled? Our men expressed themselves gratified with the attention they had received from the rebel doctor: for which I could do no less than thank him. We then placed Capt. K. in the Ambulance and returned to our hospital."

There were in addition rest-houses conducted by civilians known as *wayside hospitals*. This project originated in Columbia, S.C., and was sponsored by the Young Ladies Hospital Association in 1861. The girls first busied themselves making homespun shirts, knitting socks and rolling bandages. As the war continued the numbers of sick soldiers returning home to convalesce began to be considerable. Often they were delayed hours between trains with no accommodations for their comfort. A clergyman of Columbia became interested and suggested to the young ladies that they establish a room in the depot providing refreshments for the men. The project was undertaken with enthusiasm, soon growing to enormous proportions and spreading to other Southern cities, and older women, physicians and older men were called upon to help. Facilities were offered for bathing, dressing of wounds, meals and a night's lodging. Established in March, 1862 it continued until the end of the war, serving many thousands of men. So much for canteen service in that day.

Besides the Army hospitals and wayside hospitals a number of nursing and convalescent homes were established by private means in residences, particularly in the early days of the war when the need was greatest. Chisolm says "Women have established hospitals and by private means and their individual efforts have successfully conducted large establishments." One such was the Roberson Hospital maintained by Miss Sally Tompkins of Richmond, opened ten days after the Battle of Manasses and continuing service until July 13, 1865. Here over 1400 Confederate soldiers received medical care. Owing to the great number of hospitals maintained at personal expense without military supervision, a law was passed demanding their discontinuance and ruling that no hospital would be allowed except it be under the care of a commissioned officer of a rank of Captain, that being the rank of an Assistant Surgeon. Miss Sally protested to the Secretary of War who said that only the President of the Confederacy could help her. She then went to President Davis with her hospital record. This showed the death-rate in her institution to be small, and the percentage of soldiers returned to service large, in fact better than that shown by any other hospital in Richmond. In order to comply with the law, President Davis commissioned Miss Sally Tompkins as a Captain. She accepted the Commission but refused to accept pay, continuing to operate her hospital at her own expense.

Transportation of wounded was difficult and often the cause of death. Hand-carried litters, resembling a folding canvas cot, were easily broken, heavy to carry and were often destroyed. Ambulances were four-wheeled, spring wagons, with a box-body of $3\frac{1}{2} \times 7\frac{1}{2}$ ft. Two could be carried lengthwise on stuffed seats; or a drop could provide a continuous bed. The ambulance carried two men lying or 10 to 12 sitting. Horse-litters were also used, being 3 x 16 feet and folding in the middle. Two of these were joined and were on either side of a horse's back, like panniers. The mortality from transportation alone, though undetermined, must have been large.

Men detailed from personnel acted as nurses in regimental and in general hospitals. Local women often gave volunteer help in the general hospitals and opened their homes for soldiers needing convalescent care, and for cases of unusual severity. One such was Mrs. Ella K. Newsom, sometimes called the Florence Nightingale of the Southern army. Mrs. Newsom, quite wealthy in her own right, was the widow of a physician. Taking her servants with her, she served in the hospitals of Bowling Green, Nashville, Memphis, Chattanooga, Corinth, Marietta and Atlanta. She lived in the hospitals and ate the same food as that given the patients. She notes her breakfast during the last years of the war as being composed of rye coffee sweetened with sorghum, hard tack and sometimes a slice of baker's bread. Another woman who gave devoted service was Miss Kate Cummings of Mobile who describes her experiences in her book, "Journal of Hospital Life in the Confederate Army of Tennessee from the Battle of Shiloh to the end of the War: with sketches of life and character, and brief notices of current events during that period."

The care of sick and wounded *prisoners* was a matter of much controversy during and after the war. Contemporary accounts lead one to believe that conditions in the North and South were equally bad. Certain it is that the bitter feeling of the times colored all reports and accusations. In May of 1861, the Confederate Government passed a law providing for exchange of prisoners, but the exchange was not carried out until July of 1862 and then very incompletely; it was practically suspended in 1864. As a result of the meager sources of available supplies the Confederate Government was severely overtaxed by provision for thousands of prisoners. Regulations ordered that prisoners be afforded the same care as enlisted men, but where supplies were so inadequate, it is probable and understandable that preference may have been given the fighting forces. Conditions in Andersonville Prison were the subject of widespread scandal, and in 1864 Dr. Joseph Jones asked and was granted permission to visit Camp Sumter. Lack of proper police and hygienic facilities had caused the death of 9,479

persons, nearly one-third of the entire number of prisoners. Five thousand were seriously ill and deaths exceeded one hundred per day. Only one medical officer was available to care for over 2000 sick and wounded, the chief causes of death being scurvy, diarrhea and dysentery. Dr. Jones reported the urgent need of an official investigation. The full report in manuscript, of conditions as found by Dr. Jones, is to be seen in the Rudolph Matas Medical Library. It is illustrated by water color sketches of many cases, by the author. This manuscript alone contains a wealth of information as to diseases of the war years, under conditions of malnutrition, crowding and serious infection. Dr. J. S. Hopkins was immediately ordered by the Confederate Government to this assignment. His report confirmed conditions as previously detailed by Dr. Jones, and recommended "the immediate removal from the prison of not less than 15,000 prisoners; detail on parole of a sufficient number of prisoners to cultivate the necessary supply of vegetables . . . ; the immediate erection of barracks to shelter the prisoners; to furnish the necessary quantity of water, have wells dug to supply the deficiency; divide the prisoners into squads, place each squad under the charge of a sergeant, furnish the necessary quantity of soap, and hold each sergeant responsible for the personal cleanliness of his squad; furnish the prisoners with clothing at the expense of the Confederate Government, and if the government be unable to do so, candidly admit its inability and call upon the Federal government to furnish them; inspect the bake-house and baking daily and cover the open culvert which ran through the prison camp." Dr. Hopkins recommended that the hospital tents be floored with planks; that sanitary facilities be increased and often cleaned; that the diet be augmented with vegetables and beef soup; that medical visits be increased to two each day; and that a medical officer be assigned solely to the duty of inspecting the hospital and bakery, reporting conditions directly to headquarters. The state of sanitation which existed previously may be imagined from the enumeration of the recommendations.

As an example of similar conditions existing in the North, it is said that Rock Island prison, which was established in December, 1863 and functioned only a little more than a year, held 2,484 Confederate prisoners, of whom 1,922 died—only about twenty per cent surviving. The Federal prison at Camp Douglas in February, 1863, showed the highest mortality of any prison, North or South, during the War, ten per cent dying within one month.

The U. S. Sanitary Commission was a Northern group organized independent of Government authority, to investigate and aid in improvement of health conditions of the soldiers. It was composed of some of the leading physicians of the day. While most of the activities of the Commission were directed toward Federal hospitals, nursing and am-

balance service, and sanitation in camps, in the latter years of the War investigation of Confederate prison camps and hospitals was undertaken in some cases. It is difficult in the mass of contradictory evidence to separate truth from prejudice, and proof of intentional neglect from inability to offer amelioration from want of personnel, food and medical supplies.

Dr. Henry Wirz, Commandant of the Confederate States Military Hospital at Andersonville from February 1864 until the end of the War, although held by Confederate authorities entirely innocent of conditions which existed before he assumed command and which he was bending every effort to correct, was courtmartialed before a Federal Court of investigation, immediately after the close of the War and executed on November 6, 1865.

Since medicines and all *medical supplies* were declared contraband early in 1861, the only means of securing them from outside the limits of the Confederacy were by capture of Federal supplies, or by blockade running. In general, the order of importance, in bringing in contraband materials was first, arms and ammunition; second, clothing, footwear and hats; and third, the drugs and chemicals most needed, such as chloroform, quinine, opium and morphine. Since medical supplies stood third on the list of precedence, it early became of paramount importance to utilize the resources of the area for medical purposes. Surgeon F. R. Porcher was detailed by the Surgeon-General to investigate indigenous plants and herbs, and their potential therapeutic use. His book, "Resources of the Southern Fields and Forests, Medical, Economic and Agricultural, being also a medical Botany of the Confederate States with Practical Information on the useful Properties of the Trees, Plants and Shrubs," published in 1863, reports his findings and furnishes us with an amazing wealth of medico-botanical information. The same year a small pamphlet issued by the Surgeon-General's Office, titled "Standard Supply Table of the Indigenous Remedies for Field Service and the Sick in General Hospitals" presented in tabular form the best of this information. Five medical laboratories were established in which the plants and herbs were prepared for medicinal use. The Supply Table gives botanical and common names of plants, medical properties, dose, form of issue and estimated quantity needed for a given number of patients for a specified period. The cultivation of castor beans and peanuts was encouraged for the production of oil, but an effort to grow poppies for opium in Georgia and North Carolina was unsuccessful.

Official communications from the Surgeon-General's Office urged the use of herb preparations and advised the detail of enlisted personnel in the collection of the necessary plants. Frequent orders recommended the utilization of substitutes for particular disease condition. In May, 1863, an infusion of the common elder is advised "as a means of expell-

ing maggots infesting wounds," and in December, 1863, the following formula for a compound tincture of indigenous barks is announced as "a tonic and febrifuge and as far as practicable for quinine."

Dried dogwood bark, 30 parts; dried poplar bark, 30 parts; dried willow bark, 40 parts; whiskey, 45 degrees' strength; two pounds of the mixed bark to one gallon of whiskey. Macerate 14 days. Dose for tonic and febrifuge purposes, one ounce three times a day.

Whiskey was supplied by moonshiners, and rum was manufactured in New Orleans from molasses. Books were more scarce than instruments. Sometimes the surgeons bought books from the homes of doctors in the locality of their service. Dr. D. J. Roberts bought a copy of Erichsen's *Surgery* from a Dr. Johnson in the vicinity of Clinton, La., for an ounce of sulphate of quinine.

Quinine was one of the most sorely needed drugs. An article in 1864 reports the external application of oil of turpentine as a substitute for quinine in intermittent fever. One suspects that sometimes the remedy was worse than the disease. The story is told of a soldier in the Vicksburg campaign detailed to procure quinine, calomel and opium by smuggling them through the lines. He crossed the Mississippi at Greenville, and proceeded to Canton where he obtained the supplies and returned to the river only to find it bank-full and a gun-boat near. He at length found an old dug-out, which was damaged in one end. He loaded the rear end heavily so that the front would ride above the water. After nightfall he loaded his medicines on the pirogue and swam the River, pushing the dugout ahead of him. Another story tells of the use of a hospital wagon, bearing a yellow small-pox flag, as a blockade runner. Women are said to have smuggled drugs through the lines under their voluminous skirts.

Various preparations were recommended for their analgesic virtue. Tincture of aconite, or monkshood, was used as an external anesthetic in frontal neuralgia or local pain. Poppy heads, nightshade and stramonium were also recommended to relieve pain. Phytolacca or poke-berry was often combined with sarsaparilla root, sassafras, alder or prickly ash and was said to possess analgesic properties.

As a purgative, decoctions of black-root, may-apple, white walnut bark or peach-tree leaves were advised. Onions and garlic were used in poultices, as were poke-root, celery, pepper, parsley and sage. Onions were also employed as an antiscorbutic.

In pneumonia, pleurisy and so-called catarrhal fever, the patient was treated with local applications of mustard seed or leaves, stramonium leaves, hickory leaves or pepper, alternating with butterfly root and sanguinaria until a state of nausea was produced. Lobelia was considered a reliable emetic in cough, croup and asthma.

For dysentery, a tea of red-root or sampson snake-root was prescribed, or if preferred, a pill of willow, charcoal and castor oil every 1 to 2 hours. For intermittent fever, warm bone-set tea was used to produce vomiting. This could also be prescribed for remittent fever preceded by good doses of mandrake tea, or white ash-root, prickly ash-root, Virginia snake-root or yellow-root. Calomel was seldom available at any price.

Wounds were treated with a cold water dressing with a decoction of red oak bark as a disinfectant. A weak solution of bicarbonate of soda was sometimes used. For severely infected wounds, rasped buckthorne was recommended. These were the days before Lister and his doctrine of antiseptic procedure, before the bacteriological observations of Pasteur. Inflammation and "laudable pus" were deemed essential in wound healing. The use of turpentine in fresh or suppurating wounds was thought to hasten repair, and charred cotton was considered an excellent dressing for ulcers and suppuration. It is interesting to note, however, that Dr. Joseph Jones advised the use of iodine on cuts and abrasions; and that in 1863 a group of Confederate surgeons noted the action of maggots in the eradication of infection.

Two surgical devices emanating from the Medical Service of the Confederate States Army deserve mention. Dr. Julian J. Chisolm invented a chloroform inhaler, fitting into the nostrils and designed to conserve chloroform; and Dr. J. B. Bean, a dentist from Atlanta, devised an interdental splint for use in fracture of maxillary bones. This splint was said to be so successful that Dr. Bean was given special facilities for its use in a number of cases referred to him.

Medical and surgical equipment in military service was of the simplest. Dr. Joseph Jones was said to be the only medical officer in the Confederate service to use a clinical thermometer. First-aid equipment on the battlefield consisted of a pocket case of instruments, plasters, bandages, and a few simple splints.

All authorities agree that in this as in other wars, mortality and morbidity from disease, far exceeded that from wounds. Brown believes that diseases consequent to measles cost the Confederate army the lives of more men and a greater amount of invalidism than all other causes combined. Sequellae were often diminished, by sending men home on furlough to recuperate. Diarrhea was second to measles, resulting from improper food and its poor preparation, as well as from infection. One instance is noted where a "feed of green corn from the fields" stopped an epidemic of diarrhea. In comparing the lists of debilitating conditions of the Confederate soldiers with those noted by Hurst (1940) as Medical Diseases of War, only typhoid, malaria and digestive disorders are still recorded in the *war* category, and for the first two we now have prophylactic immunization or specific therapy. Medical ad-

vances since that time have in most cases changed not only the nomenclature but our whole concept of many diseases.

It is notable that mortality from disease in armies, as a result of crowding and poor sanitation, is much higher than in civil life. For the year ending June 1, 1860, just preceding the War, the U. S. Census shows a mortality rate of 6.3 per 1,000 in males between the ages of 15 and 50. Incomplete records might bring this to 10 per 1,000. In the first year of the war this was raised to 48.7 and in the second year to 65.2 per 1,000.

The maintenance of *health in civil life* was an entirely distinct, but none the less important problem of the war. Two factors were involved, the scarcity of foods and medicines and their excessive and ever-rising cost. Every effort was made to supply the needs of the Army first, and as a result all sort of expedients were pressed into use at home. Substitutes for coffee included parched okra seeds, rye, cotton seeds, sweet potatoes, corn and peanuts. Real coffee when available sold for twelve dollars per pound, in Confederate currency. For tea, red-root, holly leaves, blackberry, raspberry and rose leaves and sassafras were used. Vinegar was made from persimmons. Candles were moulded from tallow, beeswax and sometimes mutton suet and wax. Dyes were prepared from herbs, and spinning and weaving was done on the plantations. Hats were braided from palmetto and corn shucks. Shoe blacking was compounded from Pride of India berries boiled with water, soot and a little mutton suet. Sumac berries were the source of ink. Rags were saved for paper, old iron for foundries. Salt was extracted from the earth under the floors of meat houses. Instructions are to be found in Porchers' Resources for the manufacture of glue, native dyes, ink, soap and the extraction of turpentine; directions for waterproofing material; substitutes for tobacco; and plants used for the preparation and tanning of leather. Food prices were excessive: eleven dollars for a pound of bacon, ten dollars for a small dish of green corn and ten dollars for a watermelon. When soldiers convalescing at home were threatened with scurvy for want of green food, one Southern matron bargained for a dish of vegetables daily for 14 days, at a cost of fourteen dollars. On delivery the "dish of vegetables" contained two beets and four onions.

Various *home remedies* were used in the absence of medicines; a balsam of cucumber for burns; mutton suet and sweet gum as salve for sores; blackberry cordial for diarrhea; horse mint and broomsedge tea for colds; goose grease and sorghum or honey with turpentine and brown sugar for croup; red oak bark and alum for rash; fennel seed for paregoric; tea of black haw, squaw weed or partridge berries for menstrual disorders; and beef's foot oil, hog's foot oil, or lard heated with syrup as a laxative for children.

When available, other medicines were so expensive as to be almost prohibitive. Quinine was listed at twenty dollars an ounce; castor oil at twenty dollars per gallon. In the winter of 1864-65, quinine pills cost one dollar each, and other pills, five dollars per dozen. Morphine was ten dollars per drachm and chloroform was beyond price. Even containers for medicines were scarce. Corks were cut from old life preservers, or made from corncobs. The manufacture of glass bottles was attempted but was never completely successful. Deprivations indicated by the use of such substitutes discourage criticism over those which are our lot today.

Time does not allow a study of health conditions in the general area during the war years. Such an investigation might well serve as another and entirely distinct project. Prolonged controversy raged in the post-war years, over the health status of New Orleans during the period of its occupation by the Union forces, and the question of whether the absence of severe yellow fever epidemics during that period might be attributable to the strict blockade maintained. Health statistics of individual Southern cities and states would doubtless furnish interesting data as to epidemiology and mortality as they maintained under the conditions which then existed.

Many surgeons were particularly outstanding and are worthy of more extensive study. Surgeon-General SAMUEL PRESTON MOORE was an able administrator. He served as President of the Association of Army and Navy Surgeons of the Confederate States from its organization in Richmond in 1863. He was responsible for the publication of the Confederate States Medical and Surgical Journal and the Manual of Military Surgery both of which were sent to all Confederate Surgeons. Dr. Moore remained in Richmond after the War and was elected first President of the Association of Medical and Surgical Officers of the Army and Navy of the Confederate States in Atlanta, in 1874. He died on May 31, 1889. He is described as of medium height, being very erect. He was studious but possessed a genial and keen wit. Although a strict disciplinarian, he was appreciative of good service and commanded the respect and admiration of all who knew him.

DR. HUNTER MCGUIRE was first active in the Southern cause, in being the leading spirit in causing some three hundred southern medical students to withdraw from northern medical schools in 1860. He was born in Winchester, Virginia in 1835. He served as Medical Director of the Shenandoah and later as Brigade-Surgeon of Gen. Stonewall Jackson's command. Following General Jackson's death he became Medical Director of the Army of Northern Virginia and later in the same capacity for the Army of the Valley of Virginia. He was responsible for the organization of the Reserve Corps Hospital of the Confederacy and of the Ambulance Corps. After the close of the War, he became

head of the Department of Surgery of the Medical College of Virginia, continuing in this position until 1878; in 1880 he became Professor Emeritus. He was President of the American Medical Association in 1892. He died on September 19, 1900.

DR. JAMES B. MCCAW was born and received his early education in Richmond, but graduated in medicine at the University of New York in 1844, being a pupil of Dr. Valentine Mott. He was founder and charter member of the Medical Society of Virginia. At the outbreak of war, he was made Surgeon-in-charge and Commandant of the Chimborazo Hospital in Richmond, where he proved himself an able executive under formidable conditions. In the post-war years he served successively as Professor of Chemistry, Professor of the Practice of Medicine and as Dean of the Medical College of Virginia. He died in Richmond on August 13, 1906.

DR. A. J. FOARD was born in Milledgeville, Georgia and graduated at Jefferson Medical College. He served nine years as Assistant Surgeon-General of the U. S. Army, resigning at the outbreak of the War to enlist in the Confederacy. He organized the Medical service of General Bragg's Army and served in the same area throughout the War. Later he settled in Columbus, Georgia. In 1867 he was elected to the chair of Anatomy in Washington University in Baltimore. He died in 1868, at the early age of 39 years.

DR. JULIAN J. CHISOLM was born in Charleston and studied medicine at the Medical College of the State of South Carolina after which he spent some years abroad, returning to become Professor of Surgery at his alma mater. He is best known as the author of *Manual of Military Surgery*, outstanding in its day and specialty. Returning to private practice in Charleston after the War, he removed in 1869 to Baltimore where he became Professor of Operative Surgery, and Clinical Professor of the Diseases of the Eye and Ear at the University of Maryland. From 1873, he confined his practice to Ophthalmology and Otology, founding the Presbyterian Eye, Ear and Throat Hospital in Baltimore in 1877. Ill health forced him to retire in 1894, and he died in Virginia November 2, 1903.

DR. JOSEPH JONES was born in Georgia in 1833. He received his Bachelor's degree from the University of South Carolina, his Master's degree from Princeton College, and graduated in medicine from the University of Pennsylvania in 1855. He taught successively at the Savannah Medical College, the University of Georgia and the Medical College of Georgia until the opening of the War. He is particularly noted for his work on Diseases of the Southern States. His investigation relative to hospital gangrene in Andersonville Prison evidences painstaking and untiring medical observation. Following the War he held the chair of Chemistry and Clinical Medicine in the University of Louisiana,

now Tulane University, and as President of the Louisiana State Board of Health succeeded in establishing quarantine in Louisiana as an exercise of police right. He was an indefatigable student and a prolific writer. He died in 1896.

DR. MORITZ SCHUPPERT, a graduate of the University of Marburg, came to New Orleans in the early fifties. He was a prolific writer, and in 1861, he published a pamphlet of some 47 pages on gunshot wounds, which he states specifically was written for and dedicated to the Surgeons of the Confederate States Army. It is interesting to note that Dr. Schuppert was the first in this area to operate under full Listerian procedure.

Civilians lent their aid to the cause of the Confederacy in every conceivable manner. The part of the women in hospital nursing of sick and wounded soldiers has been mentioned. A word also should be said of Mrs. Felicia Grundy Porter, President of the *Woman's Relief Society* of the Confederate States. This Association was responsible for raising the money and encouraging the manufacture of many thousand artificial limbs in those days of wholesale amputation.

The author is not a physician and no attempt has been made to evaluate therapeutic methods, which were doubtless those current in that day. Rather, the problem has been approached from the standpoint of a librarian, and any merit which this study may have, will be in the indication of further fields to conquer rather than in any pretense to thoroughness. The belief that little on a subject has appeared in print, is to the reference worker as the proverbial gadfly, and so it has proved in this case. The material and bibliography presented may be considered as suggestive only, and if thereby further study is encouraged in the history of medicine in the South and in the Confederacy, this fact and the absorbing interest which the work has afforded, will have proved the laborer worthy of his hire.

OFFICIAL PUBLICATIONS

OFFICIAL DOCUMENTS OF THE MEDICAL DEPARTMENT OF THE CONFEDERATE STATES ARMY

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